29. (ONCE AMENDED) An optical disk comprising:

an error correction block structure encoded on the optical disk, comprising:

a plurality of inner parity blocks, each said inner parity block comprising an e-byte inner parity in an inner parity direction; and

a plurality of f-byte outer parities in an outer parity direction.

30. (ONCE AMENDED) The optical disk of claim 29, further comprising a plurality of data structures interleaved with the inner parity blocks.

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 1, 2, 10, 15, 17, 29 and 30 have been amended. Claims 1-34 are pending and under consideration. Claims 10-14 are deemed allowable if rewritten to overcome the rejections under 35 U.S.C. § 112 and to include the limitations of the base claim and any intervening claims.

REJECTION OF CLAIMS 29-34 UNDER 35 U.S.C. § 101:

It is respectfully submitted that the above amendments to the claims overcome the rejection. The Examiner's attention is drawn to MPEP 2106(IV)(B)(1)(a), which discusses functional descriptive material. This section states, in part "a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships . . . and is thus statutory."

Accordingly, withdrawal of the rejection is requested.

REJECTION OF CLAIMS 1-18 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH:

It is respectfully submitted that the above amendments to the claims overcome the rejection.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 1-9, 15-16, 18-27 and 29-34 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kuroda et al.

Independent claim 1 recites "generating e-byte PI for each of the plurality of PI blocks generated by segmenting, and adding the PIs in the PI direction; and generating f-byte outer parity (PO) in a PO direction of the error correction block having PIs, and adding the POs in the PO direction."

As set forth in the present specification, the present application is distinguishable from the prior art of present FIG. 1, which illustrates a 172x192 block with 10 byte PI correction and a 16 byte PO correction. As set forth in pages 2-3 of the present specification, this design is limited insofar as it cannot correct burst error in an HD-DVD, due to the smaller spot size of the beam.

FIG. 1B of Kuroda et al. is simply the data block of present FIG. 1 (prior art), and has the same 172x192 dimension and the 10 and 16 byte PI, PO corrections. Thus, this reference cannot correct burst error in an HD-DVD.

Accordingly, withdrawal of the rejection of claim 1 is requested.

Furthermore, claim 2 depends from claim 1 and recites "the PIs are Reed-Solomon codes and satisfy $(n/x) + e \geq 256$." By setting this limitation, the present invention can still correct burst errors even with the small spot size in an HD-DVD. See present Specification, p. 6.

Still further, claim 7 depends from claim 1 and recites "interleaving a plurality of data groups and the plurality of PIs in the PI direction in the error correction blocks having PIs and Pos." These features are shown, for example, in FIG. 4 of the present application. The Examiner relies upon FIG. 2 of Kuroda et al. as disclosing these features. Although this FIG. of Kuroda et al. indicates that interleaving is conducted, it does not specify that there is interleaving of data groups, and the direction of the interleaving. The corresponding text of

Kuroda et al. does not disclose these limitations either.

Accordingly, withdrawal of rejection of independent claim 1, and claims 2-9, 15-16 and 18 depending therefrom is requested. The remaining independent claims are similarly patentably distinguishable from the cited reference.

Claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over Kuroda et al. in view of Ozaki et al. Claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Kuroda et al. in view of Hoshino et al.

These claims depend from independent claims which are distinguishable from Kuroda et al. as discussed above. It is respectfully submitted that the secondary references do not overcome the above deficiencies in Kuroda et al., and it is noted that the Examiner does not rely upon these references for this purpose.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 12-27-02

By: _____

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please **AMEND** claims 1, 2, 10, 15, 17, 29 and 30 as follows:

1. (ONCE AMENDED) An error correction method adding an inner parity of e bytes and an outer parity of f bytes to an error correction block having a size of n bytes [(]in a row direction[)] x m bytes [(]in a column direction[)], the error correction method comprising:

obtaining a plurality of inner parity blocks (PI blocks) by segmenting the error correction block in an inner parity (PI) direction into x segments [(here], wherein x is an integer equal to or greater than 2[)];

generating e-byte PI for each of the plurality of PI blocks generated by segmenting, and adding the PIs in the PI direction; and

generating f-byte outer parity (PO) in a PO direction of the error correction block having PIs, and adding the POs in the PO direction.

2. (ONCE AMENDED) The error correction method of claim 1, wherein the PIs are Reed-Solomon [signs] codes and satisfy $(n/x) + e \geq 256$.

10. (ONCE AMENDED) The error correction method of claim 7, wherein the [reallocating] interleaving further comprises reallocating a plurality of PIs (PI0, PI1, ..., PIn/x) by gathering bytes having a same order in bytes included in each of the plurality of [Pis] PIs, thereby forming reallocated [Pis] PI groups.

15. (ONCE AMENDED) The error correction method of claim 4, wherein n x m is a basic address unit recorded on a disk, the method further comprising:

[forming a data frame with] dividing the error correction block into a plurality of data

frames, each of the data frames comprising a 4-byte ID, a 2-byte IED, an 18-byte RSV, two 2-KB user data blocks, and two 4-byte EDCs.

17. (ONCE AMENDED) The error correction method of claim 16, wherein $(n/x) + e \geq 256$ so that an [GF (28)] operation in a Galois Field [can be] is performed.

29. (ONCE AMENDED) An optical disk comprising:

an error correction block structure encoded on the optical disk, comprising:

a plurality of inner parity blocks, each said inner parity block comprising an e-byte inner parity in an inner parity direction; and

a plurality of f-byte outer parities in an outer parity direction.

30. (ONCE AMENDED) The optical disk of claim 29, further comprising a plurality of data [groups] structures interleaved with the inner parity blocks.